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President: Ms. Espinosa Garcés. . . . . (Ecuador)

The meeting was called to order at 4 p.m.

Agenda item 133

Impact of rapid technological change on the achievement of the Sustainable Development Goals

The President (*spoke in Spanish*): I would like to begin by extending a special welcome to His Excellency Mr. Sven Mikser, Minister for Foreign Affairs of the Republic of Estonia, and His Excellency Mr. Luis Videgaray Caso, Secretary of Foreign Affairs of the United Mexican States.

Technological change is modifying our present and our prospects for the future at a dizzying pace. Faced with this substantive and accelerated transformation of history, academics, scientists, the private sector, civil society and Governments have focused on addressing the opportunities, as well as the challenges and threats, it represents.

Our Organization must also be an active part of this conversation, which for many is the most important conversation of our time. It is a fact that technological changes have an impact on each of the Sustainable Development Goals we seek to achieve. If we want to be efficient, it is essential to assess which technological changes will allow us to accelerate the fulfilment of the Goals of the 2030 Agenda for Sustainable Development, as well as those that could jeopardize it. The contributions of this meeting are in accordance with the purposes of that agenda. I will focus on three points that I consider to be crucial.

The first is the impact of technological change on the future of work. If we want to achieve the goal of full and productive employment and decent work for all people by 2030, we must create 600 million new jobs. Rapid technological change affects jobs. According to estimates, automation may eliminate 75 million jobs by the year 2022 but would also create 133 million new job opportunities. We must therefore put appropriate strategies and policies in place that can help people to adapt and take advantage of the benefits of these new labour markets. Women and girls must, of course, be included in these plans.

My second point concerns the potential for rapid technological change in the context of climate action, in particular the advancement of low-carbon technologies. We must accelerate the development of these technologies if we want to meet the goal of limiting global warming to 1.5° C, as established in the Paris Agreement on Climate Change and in the light of Goal 13 of the 2030 Agenda. The recent report issued by the Intergovernmental Panel on Climate Change reminds us that, if we act collectively and responsibly, we can achieve the commitments of the Paris Agreement. It also alerts us to the dangers to which humankind will be exposed if we fail to do so. Technological evolution can contribute to the generation of clean and affordable sources of energy for millions of people who currently lack access to it.

Thirdly and finally, the Organization should continue to address the issue of rapid technological changes, keeping the well-being of peoples at the centre of its deliberations. Technological advances have

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the potential to transform our lives for the better, but it is critical that these advances also be accessible to everyone. Otherwise, rapid technological change can increase inequality and move us further away from achieving Goal 10 of the 2030 Agenda. A clear example of this is digital technologies; despite their rapid expansion, only 48 per cent of the world's population has access to the Internet. The digital divide that persists within and between countries is an obstacle to sustainable development.

Another challenge associated with the digital age is the protection of the individual's right to privacy. I wish to highlight that certain technologies that are still being developed — such as artificial intelligence or machine learning — require solid regulatory frameworks to address the challenges and risks that their use represents for the future of humankind.

Technological change imposes an unprecedented transformation upon us, and our Organization cannot ignore this paradigm shift. Under this premise, I am sure that we will be able to fulfil our multilateral commitments for present and future generations.

I now give the floor to the observer of the European Union.

Mr. Mauthe-Käter (European Union): I have the honour to speak on behalf of the European Union (EU) and its member States. The candidate countries the former Yugoslav Republic of Macedonia, Montenegro, Serbia and Albania; the country of the Stabilization and Association Process and potential candidate Bosnia and Herzegovina, as well as Ukraine, the Republic of Moldova and Georgia, align themselves with this statement.

People in our societies feel that the world is changing at a rapid pace. Many millions of people have embraced this change as a great opportunity to improve their lives. They have been able to harness the opportunities that new technologies can bring to all dimensions of sustainable development. Others are at risk of being left behind, in particular the half of the global population that is still not connected to the Internet. There are concerns about the impact of new technology on employment, privacy and security, for example. We also face a gender digital divide. All of us — Governments, as well as other stakeholders including the private sector, civil society and the technical community — have responsibilities to ensure that people across the globe are able to benefit from the opportunities of new technologies and that people's concerns are addressed.

The task ahead of us is to work collaboratively together to harness the positive, transformative power of new technologies for the good of all and manage the risks and challenges. We therefore welcome the fact that the Secretary-General has put this issue at the top of his agenda by establishing the High-Level Panel on Digital Cooperation. We also welcome the Secretary-General's strategy on new technologies, which will guide the work of United Nations agencies. At the same time, we recall key documents in that area, such as the outcome document of the open consultation process on overall review of the implementation of the world summit on the information society. Furthermore, we commend Mexico and Japan for their leadership as co-Chairs of the third Multi-Stakeholder Forum on Science, Technology and Innovation (STI) for the Sustainable Development Goals, and we express our appreciation for the important work of the United Nations 10-Member Group to support the Technology Facilitation Mechanism, which also includes representatives from Europe.

In our joint journey towards this new future, it might be helpful to agree together on where we actually want to arrive at. The vision of the European Union and its member States encompasses a future in which new technology leads to sustainable development, economic growth, job creation for all, the protection of our climate and the environment, women's and girls' empowerment, better education, advancements in agriculture and the reduction of inequalities among and within countries. We envision a future in which new technologies contribute to good governance, strong democratic institutions and the social well-being and integrity of societies, as well as human rights, fundamental freedoms and the rule of law, instead of autocracy and discrimination. Our vision is of a future in which the integrity and dignity of every individual are respected, including every individual's right to the freedom of expression and protection from arbitrary interference in his or her privacy. So, how do we get there?

First, we need to maintain a transparent global dialogue that includes all relevant stakeholders from Governments, the private sector, civil society, the technical community and academia. This year's STI Forum was a good example of how much energy and valuable ideas are set free when all those actors come together, as we heard from the Deputy Permanent

Representative of Mexico in the informal meeting held earlier today. We are also looking forward to the recommendations of the High-Level Panel on Digital Cooperation on how to improve that global dialogue.

Secondly, we need more cooperation and collaboration among stakeholders. For that, we need the United Nations system to open up more to other stakeholders, supported by strong multilateral cooperation. We need the United Nations as a forum where we exchange good practices and learn from one another's experiences, not as a regulator. The Secretary-General's *Strategy on New Technologies* recognizes that we must

> "become more open to new ideas and new voices, which challenge our institutional reflexes for business as usual and allow the United Nations to credibly engage with partners".

That is essential if the United Nations is to become an obvious partner for industry and civil society stakeholders.

Thirdly, we need to find better ways to utilize science, technology and innovation, and existing mechanisms, such as the Internet Governance Forum, for the implementation of the 2030 Agenda for Sustainable Development. Without science, technology and innovation, we will not be able to reach the Sustainable Development Goals by 2030. We heard that today from the representative of the United Nations Conference on Trade and Development (UNCTAD), which does great work, together with other United Nations entities, to foster that agenda.

The European Union and its member States have already put measures in place to translate that vision into a reality. With the EU digital single market, we are tearing down regulatory walls and moving from 28 national markets to a single one. That can contribute €415 billion per year to our economy and create hundreds of thousands of jobs. With our new General Data Protection Regulation, we have established one clear set of data protection rules for all companies operating in the EU. That means people have more control over their personal data and that businesses benefit from a level playing field.

With regard to artificial intelligence, European leaders have decided to coordinate a joint strategy that will also build on the work of the new EU Global Tech Panel and various activities in EU member States. In addition, we are also stepping up our cooperation with partners in developing countries. In 2017, we adopted a new policy involving the Digital4Development initiative and significantly increased the number of projects, including by investing in capacity-building, digital skills and digital health. In December, together with UNCTAD, we supported our African partners in organizing the first Africa eCommerce Week in Nairobi.

Let me conclude by expressing our commitment to engaging constructively in this global dialogue on new technologies and rapid technological change, and making sure that all voices are heard and no one is left behind.

The President (*spoke in Spanish*): I now call on the Minister for Foreign Affairs of Mexico.

Mr. Videgaray Caso (Mexico) (*spoke in Spanish*): With your permission and understanding, Madam President, before making a statement on the impact of rapid technological change I would like to take a few minutes to discuss a topic other than that which has brought us together. I should like to talk about an urgent humanitarian issue.

It is public knowledge that a large group of our Central American brothers and sisters coming from Honduras have formed a caravan that is approaching the border between Guatemala and Mexico. I would like to inform the General Assembly that Mexico has requested institutional cooperation from the Office of the United Nations High Commissioner for Refugees and the Secretary-General so that, in accordance with the Cartagena Declaration on Refugees, we can receive assistance from the United Nations system to process refugee applications submitted by caravan members, as well as find permanent solutions that respect their dignity and rights. For Mexico, it is of the utmost importance to deal with the caravan in accordance with the law and — I emphasize — with respect for and the protection of the human rights of the caravan members. On behalf of all Mexicans, from this rostrum I call on the region and the entire world to become involved in Central America through international development cooperation. It is only through cooperation that leads to peace, jobs and economic development that the structural causes of this contemporary humanitarian phenomenon can be resolved. I thank everyone for their understanding.

I very warmly welcome the Minister for Foreign Affairs of Estonia and all representatives participating

in this meeting. It is an honour for me to head up this discussion, mandated by resolution 72/242 of December 2017, which was sponsored by Mexico and 35 other countries that recognized the importance of rapid technological change. Today, less than a year later, the multifaceted and profound effects of rapid technological change are more obvious than ever. The Secretary-General has recognized the importance of the phenomenon and has made it one of his priorities, as we heard him say in this Hall at the opening of the current session of General Assembly (see A/73/PV.1).

It is clear that the effects of technological change affect all countries in the economic, social and environmental fields, regardless of their level of development. It is a phenomenon that is of concern to us all. The new technologies that the founder of the World Economic Forum, Klaus Schwab, has labelled the "fourth industrial revolution" have the potential to change the destiny of humankind forever. They have the potential to promote development and well-being, but also bear risks, even some that are existential for humankind.

Given that challenge, Mexico has decided to move from being a passive observer to actively seeking solutions. While the world is changing at an exponential rate, we must recognize that public policies continue to develop at a linear speed. For that reason, Mexico has brought the discussion of this topic to a universal forum, the United Nations, and invited its States Members to share their experiences. We also ask the United Nations system to provide the support necessary to make the most of the benefits of technological change and to ensure that no one is left behind.

Mexico is convinced that the General Assembly is the ideal space in which to raise awareness among States and societies about the paradigm shift that technological progress represents and will represent. With that, we will create the opportunity to anticipate and mitigate potentially negative effects in a timely manner. The transformation that we are witnessing today is happening through multiple new technologies, which present challenges and opportunities.

Since the adoption of the resolution that gathers us here today, between 44 and 60 countries have met periodically to listen to experts and organize discussions to design better public policies. One such meeting, for example, took place in Silicon Valley, at the World Economic Forum's Centre for the Fourth Industrial Revolution, at which I had the privilege of participating in May. A few weeks ago, at the opening of this session of the General Assembly, the message delivered by the President of Mexico (see A/73/PV.6), Mr. Enrique Peña Nieto, was clear on this critical issue — new technologies have increased the level of demand on Governments to obtain immediate and concrete results. Aware of the urgent need to act, Secretary-General Guterres has also assumed leadership with the creation of the High-level Panel on Digital Cooperation and by presenting his strategy on new technologies, which deserves our full recognition and support. We will be attentive to its results in the spring of 2019.

We trust that the United Nations system will be able to support us in taking better advantage of new technologies as the main means of implementing the 2030 Agenda for Sustainable Development. At this stage of learning, we have also enjoyed the support of the main United Nations agencies, such as the Department of Economic and Social Affairs (DESA) and the United Nations Conference on Trade and Development, which today governs the Technology Facilitation Mechanism. The goal is to exploit technological advances to accelerate the implementation of the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda, without limiting or halting innovation and technological development.

We also had the opportunity to listen to experts at the previous Multi-Stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals, co-Chaired by Mexico and Japan, and at the Commission on Science and Technology for Development. We have undoubtedly taken a first step to achieving global awareness. Now more than ever, it is vital to understand the opportunities and challenges of technological change and the need for all countries and societies to be involved.

Mexico has taken action on this matter. At the global level, together with DESA, in 2016 and 2018 two meetings were convened of experts from around the world, whose recommendations fed the Forum on Science, Technology and Innovation for the Sustainable Development Goals. At the regional level, as Chair of the Forum of the Countries of Latin America and the Caribbean on Sustainable Development, in 2017 and 2018 Mexico promoted the exchange of opinions with multiple actors on the opportunities and challenges related to the use of technologies emerging in the region. That was reflected in the report entitled *Data,*

algorithms and policies: Redefining the digital world, which was presented by the Economic Commission for Latin America and the Caribbean.

At the national level, I must point out that Mexico has established a national digital strategy coordination in the Office of the President of the Republic, which this year presented Mexico's strategy on artificial intelligence, seeking to develop an adequate framework of governance through multisectoral dialogue that would allow us to better understand the technology and develop better practices and more efficient public policies. With that, Mexico has become one of the first 10 countries to have established such a strategy.

On its own initiative, the Government of Mexico has set itself the task of identifying the impact of the new technologies that constitute the fourth industrial revolution, with particular emphasis on artificial intelligence, within the scope of the 2030 Agenda. We have identified, one by one, the positive and negative impacts of these new technologies on the Sustainable Development Goals. As an example, I should like to share some of the possible impacts that we have identified. Regarding Sustainable Development Goals 8.2, 8.3 and 9.5, we have identified that artificial intelligence could give a significant boost to commercial productivity by developing more efficient processes. That could reduce costs and allow more capital to be reinvested in innovation, thereby accelerating the fulfilment of those Goals.

However, it is also a matter of fact that artificial intelligence is one of the greatest challenges, as you mentioned a moment ago, Madam, when we consider the labour market, particularly the labour displacement that may result from artificial intelligence technology replacing the work carried out by human beings. It may generate abrupt and immediate job losses for millions of people. That would undoubtedly have a particularly serious impact on the creation of decent jobs, which is set out in Sustainable Development Goal 8.3. We have therefore identified specific positive and negative impacts of each of the different emerging technologies — such as blockchain, nanotechnology and biotechnology — on compliance with the SDGs.

The informal meeting that was opportunely convened this afternoon highlighted important elements and evidence of the need to act without delay on this crucial issue. For our part, in order to better understand the complexity of the issue, we have continued working with the major universities, as well as with the Organization for Economic Cooperation and Development, the International Telecommunication Union, the International Labour Organization, UNICEF and UNESCO, among other principal agencies of the United Nations system, in response to the mandate set by resolution 72/242. With that support, the Permanent Mission of Mexico is currently negotiating a new draft resolution, with the backing of various countries, that will allow us all to be better prepared. I hope that all Member States represented here in the Assembly will join the discussion and debate on a phenomenon that affects and concerns us all. I encourage them to work together to support this initiative. With their help and support, we will ensure that the fourth industrial revolution will benefit all humankind.

In your speech a few moments ago, Madam, you stated that the debate on new technologies is perhaps the most important debate of our time. I agree. The emergence of new technologies, particularly artificial intelligence, represents an evolutionary and existential challenge for humankind. The debate is broad and attracts the interest of people from all continents and of all beliefs. In this debate, there are optimists who view a major opportunity in artificial intelligence and the fourth industrial revolution for the whole world to enjoy a better life, with improved levels of health and greater capacities, including both physical and cognitive. On the other hand, there is the pessimistic view of new technology as a threat — one that may even be existential for humankind. We are convinced that, in the light of these new technologies, the future of humankind is neither determined nor fatal. It will depend on the actions and decisions we take. We must take those decisions together. We must take them as a united humankind. Therefore, the most important forum in which to lead and guide the debate is the United Nations and the General Assembly. Madam President, I commend your initiative and the convening of this debate. I hope that it will be the most important debate of our times, as you said.

The President (*spoke in Spanish*): I now call on the Minister for Foreign Affairs of Estonia.

Mr. Mikser (Estonia): Estonia aligns itself with the statement just delivered by the observer of the European Union.

In my national capacity, I would like to thank you, Madam President, for convening today's timely debate

on the impact of rapid technological change on the achievement of the Sustainable Development Goals and enabling me to focus on digital technology.

During the past three decades, my country, Estonia, has followed a very particular path of development. In 1991, when Estonia regained its independence after several decades of foreign occupation, it was naturally a recipient of development aid. By 1998, however, Estonia had already become a donor of such aid. That accelerated development path was due in no small part to our adoption of information and communication technologies (ICTs) and e-governance solutions. Digitization has brought Estonia stronger economic growth, greater resource efficiency, and speedier human development.

Estonia strongly believes in the principles of efficiency, equality and empathy. We want to improve efficiency in the world so that we can make better use of our resources. Estonia is a strong advocate for equality. We believe in levelling the playing field for everyone on the path to development and digitization. And Estonia truly values empathy, so we want to help others with their development. Digitization improves Government effectiveness and overall efficiencies. It improves transparency and trust in public processes and enhances citizens' engagement in building more inclusive and cohesive societies. It is therefore crucial to achieving the promises of the 2030 Agenda for Sustainable Development. Regarding efficiency, we strongly believe that ICTs can revolutionize entrepreneurship, education, employment and even health care. Digital online services provide economic growth. They bring down unnecessary barriers between citizens and the State and between businesses and sectors of the economy. They expand our boundaries and transcend borders. Estonia has shared its knowledge and experience with many nations of the world and will continue to do so, in cooperation with the United Nations Development Programme (UNDP), the African Union and all who are interested and willing.

Just recently, during the high-level week here at the United Nations, Estonia launched a cooperation project with UNDP in support of the development of e-governance, in a major initiative to support the digital transformation of UNDP and developing countries. It aims to share Estonia's e-governance expertise with nearly 170 countries and territories. The Ministry of Foreign Affairs of Estonia has provided the seed funding of €102,000 to launch the project, which will enable other Member States to benefit from Estonia's experience and hopefully find a way to replicate that model in their own countries. While everyone's digital transformation will obviously be unique and tailored to each individual country's particular conditions, the cooperation project unquestionably has immense potential to have an accelerating effect on development globally. While we are proud to be initiating this cooperation project with UNDP, the seed funding and expertise provided by Estonia must be leveraged and scaled up for the project to fully realize its potential to help countries make their digital transformations. I would like to invite all interested parties to join us in this great undertaking to support the digitization of the world.

No amount of technical expertise or technology will help countries to truly digitize without the political leadership and political will needed to drive that process. The role of leaders therefore cannot be overemphasized. I would just like to highlight a few examples from Estonia to illustrate what digitization looks like when political leadership gets it right. For example, our e-ID enables us to sign documents electronically, and that digital identity is the centrepiece of our e-Government. It brings great economic benefits. We estimate that Estonia saves as much as 2 per cent of its gross domestic product in time and money annually by using e-governance solutions. Another example is that last year, in 2017, 96 per cent of our citizens filed their taxes electronically. Tax forms are automatically pre-filled out, making the verification and submission of declarations a matter of minutes. And last but not least, Estonia is the first and so far the only country to introduce online elections. As a result, many more people are able and willing to cast their votes, which I believe is very good for democracy.

Despite all the great benefits of digitization, it is clear that it is not the cure for all of our ills. What is more, it will present its own set of challenges. However, those obstacles can be overcome if we keep working at them. All things considered, Estonia's experience shows that the benefits far outweigh the risks. New technologies should always be seen as enablers. They create equal opportunities if supported by proper policies. That does not mean that the risks related to them should not be ignored. Rather, the opposite is true, and they should be taken extremely seriously. I would say that cyberspace risks do not replace conventional risks but if anything make the overall picture more

complex. But a well-established international legal space should be able to deliver for humankind. The fact is that the world simply cannot afford not to go digital if we are to achieve the Sustainable Development Goals. We will all have to work together to make that happen, and Estonia is determined to do its part.

Mr. Mackay (Belarus) (*spoke in Russian*): The General Assembly's adoption of resolution 72/242 at its previous session encouraged Member States to analyse the impact of rapid technological change on the achievement of the Sustainable Development Goals (SDGs). It also urged a number of United Nations entities, such as the Technology Facilitation Mechanism, to give due consideration to the impact of technological change on the achievement of the SDGs.

Technology is a key means for implementing the SDGs and an important transformation lever in achieving them and delivering on the 2030 Agenda for Sustainable Development. In the context of our discussion of the impact of technological progress on sustainable development, we want to highlight the issue of technological foresight. Technological foresight is a powerful tool for the strategic planning of national priorities in the area of science, technology and innovation as a foundation for sustainable development. An effective foresight system in this area should define the optimal directions for research and the development of technologies and production, set priorities for economic development and facilitate the effective allocation of budgets through appropriate programmes and instruments.

Belarus is currently establishing a national system of technological foresight as part of its ongoing process of planning for sustainable development. We are also carrying out a comprehensive foresight exercise on scientific and technological progress for the period from 2021 to 2025, and again for the period through 2040, with the aim of defining priority directions for our scientific and technological development and promising innovative technologies, and of developing recommendations on various scientific and technological development scenarios. A number of States are doing similar work in the area of technological foresight. However, the subject of technological foresight still does not get the attention and development it deserves at the international level, and is seen only as a specialized arena for experts or for business interests. So far there is no holistic vision of cooperation between Governments in this area for the purposes of sustainable development.

In that regard, Belarus supports establishing international cooperation on technological foresight for the needs of sustainable development. Our Minister for Foreign Affairs spoke about this in the general debate on 1 October (see A/73/PV.16). We propose that interested Member States, international organizations and other partners unite their efforts in the area of technological foresight with the aim of assisting sustainable development. Such cooperation could take place in numerous concrete areas, such as the exchange of experience in technological foresight methodologies, the collective use of the results of analysis of technological trends, the improvement of expert capacity, international technical cooperation on the exchange of best practices and capacity-building, joint research and so on. In our view, cooperation in technological foresight would help countries jointly develop scientifically based conceptions of the possible options for their technological and innovative development in the context of global progress. It would enable them to approach the establishment of national priorities for scientific, technological and innovative activity more effectively.

Lastly, it could help improve the effectiveness of strategic planning for national economies and their interaction in a global context. We firmly believe that such cooperation would be in every country's interests and would be fully in line with the 2030 Agenda for Sustainable Development. For its part, Belarus is prepared to initiate and participate actively in the process of establishing international cooperation in the area of technological foresight for the needs of sustainable development, and we call on all interested States and international organizations to join the process.

Mrs. Zappia (Italy): Italy aligns itself with the statement just delivered by the observer of the European Union, and I would like to add some remarks in my national capacity.

The issue we are considering today is of paramount importance. We are no longer merely standing on the brink but at the centre of a technological revolution that is fundamentally altering the way we live, work, and relate to one another. In its scale, scope, complexity and above all its speed, this transformation could be unlike anything that humankind has ever experienced. We do not yet know fully how the so-called fourth industrial

revolution — or next production revolution — will unfold, but it is already clear that it will have global and multisectoral impact and will present extraordinary opportunities. It is also confronting us with big challenges. We should therefore respond to it with an integrated and comprehensive set of policies and actions involving all relevant stakeholders.

Rapid technological change has been increasingly discussed over the past few years in all major multilateral forums. Last year, Italy gave it major prominence within the framework of its presidency of the Group of Seven, organizing a ministerial innovation week that combined a series of ministerial meetings on the effects of the new technology revolution on industry, labour and research in the service of sustainable development. The global character of this subject makes it particularly appropriate to be discussing it in the universal framework of the United Nations, and I would therefore like to express our deep appreciation to Mexico, which spearheaded the discussion of the impact of rapid technological change by promoting the adoption of resolution 72/242. We also welcome and support the related new draft resolution to be adopted during this ongoing session of the General Assembly. We appreciate the outcome of the third Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals. I would like to recognize Japan and Mexico's successful efforts as co-Chairs of that event, and we are also grateful to the key speakers in today's informal meeting for their insightful presentations.

Italy shares the vision outlined in the Secretary-General's *Strategy on New Technologies* and supports its main principles and commitments. We believe that new and rapidly developing technologies have incredible potential for advancing human welfare and achieving the 2030 Agenda for Sustainable Development, as long as they are aligned with the values enshrined in the Charter of the United Nations, the Universal Declaration of Human Rights and the norms and standards of international laws. Technology and innovation can bring huge advances in the area of risk assessment and disaster prevention, as well as in the monitoring and mitigation of climate change, the promotion of sustainable agriculture, access to medical diagnostics and treatments, the improvement of basic and vocational education, and better management of urbanization processes through the building of smart cities.

Italy is leading in technological innovation in all of those fields. For example, we are playing a leading role in the Galileo satellite system, a project that offers a unique tool for disaster risk reduction and gives concrete support to various projects in small island developing States and least-developed countries designed to use satellite data for early-warning systems and responses to environmental disasters.

In conclusion, Italy reiterates its support for continuing the dialogue on technological innovation in the framework of the United Nations in order to ensure that our actions in this field are guided by the fundamental principles of human rights, peace, international cooperation and inclusiveness. We look forward to the next steps for this dialogue in the General Assembly and the Economic and Social Council, and we intend to participate in it actively.

Mrs. Rodríguez Camejo (Cuba) (*spoke in Spanish*) We thank you, Madam President, for convening this debate on agenda item 133, "Impact of rapid technological change on the achievement of the Sustainable Development Goals".

Implementing the 2030 Agenda for Sustainable Development demands not only a cross-sector approach but also major efforts in which science, technology and innovation play a central and decisive role. For Cuba, the development of science, technology and innovation is a priority that produces real results for society. When its benefits are put at the disposal of sustainable development they make countless contributions not only to economic and social growth, but also to the promotion of knowledge and skills.

In the past few decades, the rapid development and adoption of new technologies has been guided by the cumulative and exponential nature of their growth, their convergence, their falling costs and the Internet. The technologies with the greatest potential to help achieve the Sustainable Development Goals include big data, the Internet of Things, artificial intelligence, blockchain, 3D printing, biotechnology and renewable energy.

Digitization and connectivity are two key features that have provided a wide range of new opportunities to take advantage of digital technologies in order to address virtually the implementation of Agenda 2030 in all countries. Many of these technologies are supported on global digital platforms and will radically transform not only people's lives, but also the lives of the business,

Government and social sectors over the coming decades. Therefore, we must work to develop the necessary policies in order to ensure they are used safely and to the benefit of people.

At the global level, the resources exist to eliminate the existing gap between the countries of the North and the South and to promote broad, fair and equal access to and development of these technologies for all. This requires not only political will, but also commitment on the part of developed countries in terms of financing, investment, training, the creation of infrastructure, the dissemination of knowledge and the transfer of intellectual property and technology.

The achievements of science, technology and innovation must be used to contribute to human well-being. Cuba expresses its great concern about the covert and illegal use of these technologies to promote war, interventionism, destabilization, subversion, unilateralism or terrorist actions. The only way to prevent and confront these threats is cooperation among all States.

Cuba works on the basis of a national social and economic development plan that includes priorities to be applied until 2030 to develop a society oriented towards sustainable development in which science, technology and innovation play a fundamental role. These efforts have been carried out for more than half a century under the siege of the unjust and illegal economic, commercial and financial blockade imposed by the Government of the United States against Cuba. That failed policy hinders the full development of science, technology and innovation in my country because it impedes, inter alia, the purchase of raw materials, equipment and reagents for research and development in the biotechnology and pharmaceutical sectors; free access from Cuba to much of the contents of the Internet; payments for the use of broadband service for the country's international connectivity; access to high-performance brands and/or equipment in the information and communications sector; the purchase of spare parts for the maintenance and operation of the wind farm to generate renewable energy, to mention but a few specific sectors.

Cuba reiterates its commitment to combating inequality, underdevelopment, discrimination and manipulation and to establishing a more just and equitable international order in which science, technology and innovation contribute to the betterment of human beings in such a way that their well-being and dignity are guaranteed.

Mr. Denktaş (Turkey): As a member of the core group of exponential technological change, Turkey appreciates Mexico's efforts to bring the issue of the impact of rapid technological change to the forefront of the United Nations. This topic is of increasing interest to my country, which has the youngest and second largest population in Europe.

As we undergo the fourth industrial revolution, we should not deem the impact of technology on the economy and society as a given. We need to shape it with policies at the local, national and global levels. Member States and the United Nations could and should influence these processes. The United Nations should serve as a platform to build awareness and establish good models for country regulatory frameworks on this emerging issue. At the national level, policymakers should embrace and direct new technologies, adopt flexible policies and promote capacities to innovate.

We need proactive policies to help the labour market adapt to new demands and emerging technologies. We should also focus on training for new skills. This is not a matter for a single country or a group of countries to address. It concerns citizens of the world as a whole. We need more research to help Governments and people prepare for the changes brought by artificial intelligence and robotics. We also have to improve our understanding of the potential impact of new technologies on low-income countries. The United Nations should support countries in developing the capacity to deal with rapid technological change through partnerships, as well as the exchange of experiences and know-how.

Scientific and technological innovation constitutes a cross-cutting issue in achieving the Sustainable Development Goals (SDGs). This year's Multi-Stakeholder Forum on Science, Technology and Innovation highlighted the potential of technology to bridge sectoral and institutional silos, which is essential for achieving the SDGs. New technologies, including artificial intelligence, biotechnology and robotics, could generate new solutions to SDG implementation. However, they also risk widening the existing gaps between developed and developing countries unless the access of the latter to technology is promoted and supported. In this vein, Turkey strongly supports strengthening the science, technology and innovation capacity of the

least developed countries (LDCs) to facilitate their technological leapfrogging.

We are confident that the Technology Bank, hosted by Turkey in Gebze, will play a key role in promoting the integration of LDCs into the global knowledge-based economy. The Bank will strengthen the capacity of LDCs to scale up the deployment of technologies and manage intellectual property right issues. It will promote the development and implementation of national and regional science, innovation and technology strategies, strengthen partnerships among science, technology and innovation-related public entities, the private sector and other stakeholders.

The Bank has initiated baseline science, technology and innovation reviews and technology needs assessments in five countries — Guinea, Haiti, the Sudan, Timor-Leste and Uganda — in collaboration with all relevant United Nations agencies. The Bank will also focus on improving access for scientists and researchers to data, publications and science, technology and innovation initiatives in the following countries: Bangladesh, Mozambique, Nepal, Rwanda, Senegal, Uganda, Tanzania, Bhutan, Burkina Faso, Liberia, Madagascar and Malawi. We firmly believe that the Bank will play a key role in fostering productive capacity, structural transformation, poverty eradication and sustainable development of LDCs.

We take pride in the fact that the establishment of the Bank marked the first Sustainable Development Goal target to be achieved: SDG 17.8. Its achievement has been highly symbolic, as it responds directly to the principle of leaving no one behind of the 2030 Agenda for Sustainable Development.

We call on all partners to support the Bank's activities through both contributions and partnerships.

Mr. Cho Tae-yul (Republic of Korea): Today's topic reminds me of the meeting that I had with President Jim Kim of the World Bank last year in my capacity as the Chair of the Peacebuilding Commission. President Kim said then that, each time he visits Silicon Valley, he is taken aback at how rapidly technology is developing. He was excited about the great promise frontier technologies hold for humankind. But to make the point that technology can potentially eradicate low-wage manufacturing jobs in many parts of the world, he cited the example of 3D printers now being able to print a seamless suit at the cost of only a couple of hundred dollars. He could not stress strongly enough the sense of urgency for the international community, especially the United Nations, to be fully aware of and prepare for these extraordinary developments. I could not agree with him more, especially on the point that the United Nations needs to take action. And for that reason, I wish to thank you, Madam President, for taking the initiative to convene today's meeting on this very important topic.

Throughout history, technology has been a key enabler for humankind to take great leaps forward. The agricultural revolution in the Neolithic Age liberated humankind from food insecurity, while the industrial revolution in the eighteenth century laid the groundwork for the digital innovation of today. But unlike in the past, today's frontier technologies — encompassing, among others, artificial intelligence, robotics, biotechnology and nanotechnology — do not stop at supporting our efforts to achieve economic development. They are now rapidly driving the transformation of our social and economic landscapes to the point of potentially outpacing our ability to foresee and adapt to the changes looming on the horizon.

In fact, these new technologies can provide powerful ways to achieve the 2030 Agenda for Sustainable Development and a world free of poverty, epidemics and violence. Recent reports of the Department of Economic and Social Affairs and the United Nations Conference on Trade and Development detail how frontier technologies can help achieve each of the Sustainable Development Goals (SDGs) by increasing productivity at lower cost and developing new solutions for critical global challenges.

At the same time, rapid technological advances are giving rise to increased uneasiness and anxiety related to privacy, equality, equity, ethics, job security and cybersecurity, to name but a few. Meaningful dialogue and cooperation with all relevant stakeholders are essential if we are to harness the promise of those technologies to achieve sustainable peace and development, and still address potential adverse consequences in a timely manner. The United Nations, with its unique convening power and a brand like no other, is best poised to mobilize all the relevant actors, especially the private sector, which is at the forefront of developing and deploying emerging technologies to make collective choices regarding new technologies.

In that regard, my delegation welcomes the Secretary-General's *Strategy on New Technologies*,

which sets out how the United Nations can effectively support the use of new technologies to better address global challenges, in line with universal values and obligations, by reforming, innovating and building the capacity of the Secretariat, among others. We also welcome the High-level Panel on Digital Cooperation that was launched to implement the Strategy, and the Secretary-General's Technology Innovation Labs, to which the Republic of Korea has decided to provide financial support.

The Republic of Korea has been able to achieve rapid industrialization by making use of technology and human capital. Based on our own experiences, we firmly believe that developing countries have much to gain by taking advantage of the new opportunities offered by emerging technologies. Technological development can help accelerate the implementation of the SDGs by reducing transaction costs and creating new businesses in areas such as energy, education, environment, food security, and health. In fact, that applies to developed countries as well.

All countries, developed and developing alike, therefore need to focus on educating our young generation to effectively use those frontier technologies. We also need to reduce the technological gap among countries in terms of research and development expenditures, infrastructure, business ecosystems, domestic governance and capacity. The United Nations can provide the platform to share best practices in that regard and support Governments' efforts to build the necessary capacity.

Mr. Korneliou (Cyprus), Vice-President, took the Chair.

It is against that backdrop that my delegation welcomes the timely draft resolution to be submitted by Mexico on the impact of rapid technological change. We should also consider further developing that text in line with technological advances in the coming years. My delegation will participate constructively in related discussions.

Israeli historian Yuval Noah Harari predicted in his recent book, entitled *Homo Deus: A Brief History of Tomorrow*, that humankind equipped with data and artificial intelligence will no longer be vulnerable to famine, epidemics and war in the future. I sincerely hope that the United Nations can guide the global discourse to come up with transformative solutions on the use of frontier technologies to better prepare for the world predicted by this thought-provoking book.

Mr. Skoknic Tapia (Chile) (*spoke in Spanish*): Chile welcomes the organization of this meeting, which allows us to address the very topical and important issue of rapid technological change. We therefore appreciate and value Mexico's efforts to promote this agenda item, as we do the various presentations on the relevant work done within the framework of the United Nations, which demonstrates the global, immediate, profound and irreversible effects of new technologies. Those effects are manifested in our daily lives in various forms and through various technologies, such as artificial intelligence, big data, automation, neuroscience and nanotechnology, to name but a few.

That is also the case with digital technologies, which have revolutionized economic growth and competitiveness, to the extent that today's global economy is a digital economy. These technologies interact in a digital ecosystem, generating what is being called the fourth industrial revolution.

These new technologies open up multiple opportunities to solve the problems that afflict humankind and represent enormous potential to accelerate human progress in such key areas as health, food, energy and education. The 2030 Agenda for Sustainable Development rightly considers them to be catalysts for the Sustainable Development Goals, as well as a means to measure their progress. In that context, we must take advantage of the opportunities provided by the fourth industrial revolution and the 2030 Agenda to design more effective and comprehensive public policies that will allow us to improve the quality of life of our population in the long term.

Additionally, the speed with which the forces of technological change are shaping the world of the future poses major challenges both for our countries and for the planet as a whole. These new technologies, essentially produced in an exogenous manner, have a cross-cutting impact on society, affecting our systems of production, management and governance, and threatening to increase inequalities and exert pressure on behaviours and value systems.

The challenge we face in that regard is to build endogenous capacity into new technologies to reduce those vulnerabilities. In that connection, Chile has made significant efforts to build capacities in very diverse areas. One such initiative is the development of

our own technology to change the energy matrix in the electricity sector through the use of renewable energies, which has allowed us to lead the energy transition in the region.

Another fundamental area for our country is big data and its link to artificial intelligence, since we have the privilege of serving as a platform for more than 50 per cent of the installed capacity of the world's astronomical observatories — a figure that we expect to reach 75 per cent by the beginning of the next decade. The amount of data generated by this scientific activity and the models and computational capacity necessary to analyse them offer a unique opportunity for our country to become a global platform for big data and a privileged space to stimulate experimental developments in artificial intelligence.

Those encouraging developments should, in turn, encourage us to study the social consequences and ethical limits of scientific research and engineering. That is especially the case for the use of artificial intelligence and robotics applications, an area in which we see potential interest in regional cooperation with a view to joining discussions already under way in other regions.

Those examples demonstrate both the relevance and the necessity of this afternoon's meeting. We believe that it is imperative for Governments, the private sector, international organizations, civil society, academia, technical communities and all other interested actors to know and exchange information about the opportunities and challenges of rapid technological change in achieving the Sustainable Development Goals.

That is why Chile actively supports international cooperation in this area and in the discussion of progress achieved, just as it supports the creation of action plans and road maps, both within the United Nations mechanisms and in the various multilateral and regional mechanisms. Ultimately, it is that type of discussion and good practices exchange that will enable us to make full and responsible use of the potential of new technologies for sustainable development.

Mrs. Imnadze (Georgia): We welcome the convening of this important meeting, which is a good opportunity to discuss the impact of rapid technological change on the achievement of the Sustainable Development Goals and to reflect on related challenges.

Georgia aligns itself with the statement delivered by the observer of the European Union. I would now like to make a few remarks in my national capacity.

Over the past few years there has been an awakening, both globally and within the United Nations, around emerging technologies. Much-needed discussions on how to leverage technological advancements for the improvement of human welfare have begun to coalesce. As the Secretary-General noted in his address to the General Assembly:

> "Rapidly developing fields such as artificial intelligence, blockchain technology and biotechnology have the potential to turbocharge progress towards achieving the Sustainable Development Goals." (*A/73/PV.6, p. 3*)

Those technologies hold great promise and potential. They can contribute to curing diseases, feeding growing populations, driving economic growth and connecting businesses, communities, families and friends across the globe. Never before has the international community been more ready to capitalize on technological change to address global challenges such as poverty, food security, corruption and climate change, and never before has action in that respect been so necessary. Technology can be the agent of change.

The 2030 Agenda for Sustainable Development can benefit significantly from new technologies that can analyse large quantities of health-care data, leading to scientific breakthroughs. Artificial intelligence can revolutionize classrooms and provide virtual mentors that can analyse student learning patterns and prescribe individual learning plans to improve results. It can also drive balanced hiring practices and spotlight gender inequality, as well as map poverty from outer space, enabling real-time resource allocation.

The High-level Panel on Digital Cooperation, established by the Secretary-General in July, and his recent *Strategy on New Technologies* illustrate the important progress being made in recognizing the potential of those technologies and in facilitating discussions and enhancing cooperation among stakeholders.

While discussing and highlighting the benefits that new technologies can bring to the 2030 Agenda, we should also fully recognize the potential risks it may entail. Artificial intelligence and robotics-driven automation may result in the widespread displacement

of workers in what is being called the fourth industrial revolution. The difference between this and the previous industrial revolutions, however, is its scale and the speed at which it is taking place. Although automation will be global, the impact will not be felt evenly. Developing countries and economies in transition are likely to bear the brunt of disruption as their traditional labour-cost advantages are undercut.

We should also remember that technology is only a tool, and in the hands of criminals or terrorists it could be maliciously used to enable new digital, physical or even political threats. Yet, the promise of technology is too great to try to stop technological innovation. We cannot do it and should not try. Instead, we should strive to uphold the promise of technology while keeping its potential perils at bay.

Georgia has been actively engaged in issues related to rapid technological advancements and their potential for disruption. In 2015 and 2016, in cooperation with the United Nations Interregional Crime and Justice Institute and with the participation of world-renowned experts in the field of artificial intelligence, we organized events at the United Nations that addressed the issues related to the risks and benefits of artificial intelligence. Last year, together with like-minded countries, we joined Mexico in setting up the core group on exponential technological change. Georgia will continue to be committed to the group's cause and further contribute to our joint efforts to enhance technology for the benefit of all in helping to achieve the Sustainable Development Goals.

Mrs. Pejanović Đurišić (Montenegro): I thank the President for maintaining this important issue on the General Assembly's agenda. I also thank the Mission of Mexico for coordinating and leading the preparation of the draft resolution we are discussing today.

While Montenegro fully aligns itself with the statement made by the observer of the European Union, I shall still make some additional remarks, as we are all aware that the world faces tremendous changes related to advancements in the implementation of new technologies.

Today, we are actually at the beginning of a fourth industrial revolution. Developments in information and communication technologies, artificial intelligence, robotics, nanotechnology, biotechnology, 5G tomorrow, to name just a few, are all building on and amplifying one another. While the impending changes hold great promise and endless possibilities for sustainable development and the efficient implementation of the 2030 Agenda for Sustainable Development, there is a set of broader socioeconomic, geopolitical and demographic drivers of change that parallels the technological revolution. They all interact in multiple directions and intensify one another, with the potential to lead to greater inequality and decreased international stability and security.

That is why, in this dynamic and interconnected environment, where the limits are set only by our imagination, Member States have to pool their resources in order to leverage rapid technological changes and better understand all the benefits and risks of new technological innovations.

The draft resolution we are discussing today offers a good basis for further actions, relying on a number of other relevant resolutions, declarations and reports. It is very encouraging to recognize that the previous resolutions on this matter had a positive impact on actions taken by the United Nations, and particularly the Economic and Social Council, through the Technology Facilitation Mechanism. A clear orientation towards a multi-stakeholder approach and the inclusion of diverse United Nations entities and partnerships of different actors are sound and in line with the principles that the Secretary-General has identified as guidelines for the Organization's engagement with new technologies.

Montenegro supports and invites member countries to share national achievements, strategies, policies, best practices and other engagements. In that sense, I take this opportunity to share an excellent experience we have had in working with the International Telecommunication Union (ITU) and other countries on Montenegro's digital innovation profile. This is an analysis of a national innovation ecosystem, which provides a comparable measurement of national technological innovation capabilities in an international context. The result will be a comprehensive understanding for developing digital ecosystems, including for designing policies, implementation programmes and projects. In that manner, with ITU's help in identifying good practices, we are building elements that are critical to the digital transformation of our country, centred on achieving a number of related Sustainable Development Goals and targets. We also support the request that the reports and findings of the relevant United Nations mechanisms and commissions be updated in a timely manner with an evidence-based approach so as to provide adequate

elements for intergovernmental conclusions and recommendations. Regular yearly discussions in the General Assembly on the progress and status of United Nations actions aimed at embracing technological change in the implementation of the 2030 Agenda must be continued as a way to monitor the effects of the measures taken and to ensure timely responses to rapid changes and developments in this area.

While ensuring that all our actions align with international law, the Charter of the United Nations and the Universal Declaration of Human Rights, it is crucial that we not get lost in details and that we clearly and resolutely embrace optimism over the increasing fear that we are so often witnessing these days.

Mr. Lal (India): The human story is in many ways the story of technology. The genius of technology has always shaped human lives, societies and civilizations. We have come a long way from shaping stone tools and mastering fire to the excitement of robotics and artificial intelligence. Along the way, we have seen critical advances, such as the extraction and use of metals and of various forms of energy. Technology has improved lifespans, provided food for expanding populations, driven globalization and landed people on the moon. Human-made factors have also sometimes brought us closer to the prospect of annihilation.

The twentieth century saw science improve our understanding of building blocks such as the atom, the gene and the byte. It gave way to technologies that can manipulate those building blocks to generate immense power in energy, medicine and information and communication technologies (ICTs). The ever-increasing pace of innovation in areas such as artificial intelligence, robotics, synthetic biology, digital networking, big-data analytics, 3D printing, nanotechnology, the Internet of Things, financial technology, new materials and unmanned vehicles, as part of the fourth industrial revolution, affects a whole range of activities such as manufacturing and services, health care, education, development, renewable energy, geospatial information management, space technology and even warfare. Their convergence is facilitated by the emergence of digital platforms and the reduction in entry costs for innovators. They are once again completely altering businesses and the ways in which people interact with one another and with Governments.

Although technology is neutral, its deployment and access to its benefits are not. While emerging technologies, from cyber and genetic engineering to artificial intelligence, can transform lives for the better, the disparities in access to them exacerbate the existing inequalities and create new fault lines. There are also other concerns associated with these technologies that have to be addressed, such as cybersecurity, possible cyberattacks on critical infrastructure, the privacy of personal data, ethical issues regarding genetic manipulation and the obsolescence of some jobs and industries. Each industrial and technological revolution has had losers as well as winners among communities and even nations, but we cannot afford that now. The ever-increasing pace of technological change and its convergence, and the uncharted potential effects on human lives, economies and polities, require a serious discussion among all of us and the various stakeholders on the possible need and scope for international cooperation and governance in certain areas. We therefore welcome today's discussion on the impact of this rapid change on the achievement of the 2030 Agenda for Sustainable Development. We also look forward to receiving the report of the High-level Panel on Digital Cooperation set up by the Secretary-General.

India has consistently recognized the value of deploying science and technology to improve people's lives. From the green revolution in food security to remote sensing in agriculture and fisheries to disaster risk reduction and nuclear energy for health care, we continue to invest in science and technology for sustainable development. The use of ICTs to leapfrog and scale up financial inclusion represents a major transformational intervention. It is being achieved by interlinking biometric-based unique identity systems, opening bank accounts and using smartphones, especially for the poor and marginalized, in order to enhance the outreach and delivery of Government services while improving transparency and reducing corruption. ICT tools are also being effectively deployed to improve the quality of education and health-care services as well as access to them, including through tele-education and telemedicine. Geographic information-management systems are being deployed to provide information about water, crop inventories, the availability of other natural resources and real-time early warnings for natural disasters. We have been increasingly emphasizing imparting vocational skills that can help people to find appropriate employment opportunities. One of our flagship programmes is Digital India, which seeks to use such technologies in a range of sectors and to bridge the digital divide.

Technology is a cross-cutting enabler for sustainable development, economic growth, social inclusion and environmental sustainability. In an interdependent world, the risks of uneven economic growth, development and climate change are also globalized. It is in our collective interest to collaborate to provide more equitable access to technology. Commercial interests must be balanced against the greater good.

In conclusion, the transformative impact of emerging technologies for the greater good is clear, even while their other implications are not fully understood. Those require greater discussion, understanding and a sense of collaboration for our collective interest.

Mr. Chumakov (Russia) (*spoke in Russian*): The world is on the threshold of a significant paradigm shift and there is a growing demand for new economic and social models that can take on the challenges of globalization and increasing interdependence. The pace of technological progress, stimulated by the digital economy, is continually increasing. Emerging technologies such as artificial intelligence, the Internet of Things, 3D printing and others are changing society at an ever-increasing speed. In particular, the use of artificial-intelligence capacities to transition to exponential development could lead to profound economic, social and environmental results and changes involving industries, consumers, Governments, research institutes, industry organizations and society as a whole. Biotechnologies are transforming agriculture, while nanotechnology research is paving the way for new methods of medical diagnostics and treatment. However, it is also clear, as many speakers have said here today, that new technologies can also bring certain risks, especially for developing countries, and can contribute to an increasing technological divide in which those countries are left behind.

Although studying the impact of technological development is a relatively new process for the United Nations, we believe that the Organization already possesses the necessary tools for it. As we see it, the Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals held under the auspices of the Economic and Social Council is the most appropriate global platform for exchanging views on the impact of new technologies on sustainable development, as well as for sharing best practices and experience so as to maximize the benefits of change, reduce the risk of negative effects and discuss the implementation of national, regional and international programmes in the area. We would be interested in obtaining more detailed information on the work of the High-level Panel on Digital Cooperation established by the Secretary-General.

We would also like to underscore that studying the impact of technological progress should not be limited to information and communication technologies and the solutions they bring, such as artificial intelligence and blockchain technologies. A more balanced and holistic approach to identifying the challenges and opportunities that scientific progress presents is essential. In particular, there has been discussion at the international community's highest levels for some years now of issues related to the establishment of a new industrial order on a basis of nature-inspired and convergent technologies. We firmly believe that we are about to make a major leap forward in the areas of material sciences and genome research from which we will emerge at a new level in the development and implementation of such technologies. Essentially, that means broad interdisciplinary research at the nexus of the mathematical, physical, biological, information, cognitive and other sciences.

Mr. Lauber (Switzerland) (*spoke in French*): The Swiss delegation would like to thank Mexico for its commitment to this agenda item and for its leading role in encouraging discussion on a major topic of our times.

The way we use new technologies for the benefit of all, but also how we think and act with a view to achieving greater and more systematic digital cooperation, will be decisive in building our future. Digitization has brought many positive developments to the lives of millions over the past two decades. However, technology in itself is neither good nor bad. It is what we make of it that determines its qualities. We are at a decisive turning point, where citizens, businesses and politicians are increasingly concerned about some of the most complicated aspects of digitization.

With regard to Government intervention and the regulation of digitization, Switzerland believes it important to follow an approach that is conducive to innovation. Digitization is not limited to connecting people and objects. It also links various policy areas that have traditionally been treated independently of one another. In the digital world, we must take those interdependencies into account by jointly addressing issues such as Internet access for all, market regulation and the potential of digitization to help us achieve

the Sustainable Development Goals. In that regard, my delegation would like to thank the President for convening an informal meeting of the Assembly to discuss the impact of rapid technological change on the achievement of the Sustainable Development Goals.

The 2017 United Nations Internet Governance Forum brought together key players from the international community in Geneva. In a high-level session on the future of global digital governance, we heard many voices from various interest groups, including the private sector, calling for a higher level of cooperation that would lay the foundations for a more stable and trustworthy digital space. That is why Switzerland warmly welcomes the Secretary-General's launch of the High-level Panel on Digital Cooperation. We are sure that the Panel, which is made up of eminent members from diverse backgrounds, will generate concrete ideas on how the many actors in digital governance can cooperate more constructively and effectively so that we can all take better advantage of the opportunities afforded by digitization. In that regard, we also firmly believe that multi-stakeholder cooperation is paramount and that the Internet Governance Forum has a key role to play in present and future digital cooperation. Switzerland looks forward to this year's Forum, which will take place in Paris in November.

Lastly, as the Assembly may know, the High-level Panel on Digital Cooperation very recently made a public appeal for comments on the key aspects of digital cooperation, particularly the values, principles and mechanisms that are at stake. Switzerland would like to encourage active participation in that endeavour and in the work of the High-level Panel in general.

Mr. Alshamsi (United Arab Emirates) (*spoke in Arabic*): I would like to thank the President of the General Assembly for convening today's meeting, and the speakers and authors of the report (E/2018/50/Rev.1) for their guidance and contributions. On behalf of the United Arab Emirates, I want to thank the Secretary-General for all his efforts on new development issues, including technology and digital cooperation. We also welcome the strategy he has launched on the Organization's approach to modern technologies.

The United Arab Emirates strongly supports multilateral activity on the interface between technology and the Sustainable Development Goals (SDGs), particularly with regard to emerging and new technologies. If we are to achieve the important goal set by the President of making the United Nations relevant to all people, the Organization must be at the forefront of the issues that will determine development outcomes.

The United Arab Emirates believes that rapid technological change is one of those issues that have an impact on development. Artificial intelligence has become a source simultaneously both of global optimism and concern. For that reason, last year my Government appointed the world's first Minister of Artificial Intelligence, as well as a Minister of Advanced Sciences. We take pride in the appointment of Mr. Mohammad Abdulla Al-Gergawi, our Minister of Cabinet Affairs and the Future, as a member of the High-level Panel on Digital Cooperation. We are also honoured that next week the Emirate of Dubai will host the United Nations World Data Forum, in which Deputy Secretary-General Amina Mohammed will participate. We are determined to continue empowering ourselves and our global systems in order to manage technology and ensure that it is used for the benefit of humankind. Based on our experience, we would like to make the following observations.

First, we must not underestimate the importance of documenting the values governing technology at the United Nations. The impact of rapid technological change on sustainable development is inherently linked to the fundamental values of technology. For example, we must ask ourselves whether or not technological development and its uses bring us closer to achieving our goal of eradicating poverty while providing education, combating climate change and achieving other Sustainable Development Goals. If we are to answer those questions, the international community must agree on the mechanisms and values that our management of technology and assessment of its uses will be based on.

Secondly, we must take advantage of both the public and private sectors when pursuing the use of technology in the service of the SDGs. To ensure that the United Nations performs an effective role in this area, we need to invite the private sector to participate in the relevant forums and meetings held in order to provide partners and institutions with the appropriate platform to enrich the debate on harnessing technology. For instance, the Famine Action Mechanism, which was launched this year during the high-level segment of the General Assembly at its seventy third session, was the outcome of collaboration among various institutions

and organizations aimed at predicting and responding to famine risks by using technology and artificial intelligence. We hope to see more such partnerships.

Thirdly, we must urgently address the so-called technology gap. Reports indicate that more than half of the world's population is not connected to the Internet and is therefore deprived of the opportunities provided by technology in the areas of education and communication. That disconnection from technology and the digital leads to their inability to participate in subsequent modern development activities.

In conclusion, the United Arab Emirates looks forward to working with Member States, the United Nations and all other stakeholders in order to achieve our desired goals.

Ms. Ahmad Rafie (Brunei Darussalam): We join others today in giving due recognition to the vital role of science, technology and innovation in achieving the Sustainable Development Goals (SDGs). At the outset, we wish to recognize the invaluable discussions on this topic through various existing platforms, notably the Multi-stakeholder Forum on Science, Technology and Innovation for the SDGs and the Commission on Science and Technology for Development.

Notwithstanding those forums, we see merit in taking every opportunity to enhance our understanding of the impact that rapid technological change can have on the achievement of the SDGs, and to share knowledge and best experiences in addressing the potential challenges presented by technologies. Unprecedented and simultaneous advances in artificial intelligence, robotics, the Internet of Things, autonomous vehicles, 3D printing, biotechnology, materials science, energy storage, quantum computing and other technologies are redefining industries, blurring traditional boundaries and creating new opportunities. That has come to be known as the fourth industrial revolution, 4IR or Industry 4.0. The revolution is driven by digital data, connectivity and cyber systems. It has the potential to create impressive new, and sometimes unimaginable, business opportunities for those who are innovative and agile.

Sustainable development calls for concerted efforts towards building an inclusive, sustainable and resilient future for people and planet. For sustainable development to be achieved, it is crucial to harmonize this revolution with economic growth, social inclusion and environmental protection. All of those elements are interconnected and vital to the well-being of individuals and societies. Brunei Darussalam is cognizant of that. His Majesty Sultan Haji Hassanal Bolkiah Mu'izzaddin Waddaulah and Yang Di Pertuan of Negara Brunei Darussalam recently stated that the country is witnessing the fourth industrial revolution, where digital technology is changing the way we live and work. The response to the revolution needs the involvement of all stakeholders — the public and private sectors as well as the community — with a view to supporting knowledge-based development of the nation.

For Brunei Darussalam, our national Vision 2035 aspires to create a well-educated and highly skilled society, improve the quality of life and generate a dynamic and sustainable economy. In order to realize the benefits and harness the opportunities of the fourth industrial revolution for its society and industries, which is expected to show its benefits over the next 10 to 20 years, Brunei Darussalam has worked to align its national strategies and the corresponding ecosystems so that the country is able to adapt and evolve with current realities.

Education is a key component in the national strategy to equip our youth with the necessary knowledge and skills so that they can positively contribute to national growth. There is continuous review and upgrading of our education system as a whole, from foundational to tertiary education and through to continuing vocational training. The aim is to ensure the continued availability of a relevant stream of skills, with a specific focus also on science, technology, engineering and mathematics. Furthermore, as announced at the Legislative Council earlier this year, the Ministry of Education is placing great emphasis on improving the quality of education at all levels. That includes a focus on strengthening the quality of teaching and learning for twenty-first century skill sets. At the same time, it is also our hope that the Centre for Lifelong Learning can contribute to the development of a highly skilled workforce for a knowledge-based society, as envisaged in Vision 2035 and beyond.

To ensure that the country's governance, policies, laws and regulations are supportive of the advancement of industries and the creation of new ones, Brunei Darussalam launched a national information and communications technologies (ICT) white paper for the period 2016-2020. The white paper promotes a national digital strategy, with ICT playing a role as Brunei's

future engine of economic growth, and focuses on the six key sectors, namely, energy, health, transport, services, education and e-government. Dramatically scaling up the ICT infrastructure will put in place a system that is fast, secure and reliable enough to support the hundreds of billions of industrial devices that will connect to the global industrial Internet of Things. In addition, a supporting mechanism that will allow small and medium-sized enterprises to benefit from the digital economy, such as through e-commerce, is also being developed, from cybersecurity to e-payment. Brunei Darussalam has geared up its efforts to diversify its economy with manufacturing in various sectors and the digital economy having been identified as both clusters for development and priorities for attracting foreign direct investment.

Supplementary to that, Brunei Darussalam continues to establish connections to the global economy through enhanced economic cooperation, which includes capacity-building and technical assistance. That is evident through our participation in various platforms — such as the World Trade Organization, the Asia-Pacific Economic Cooperation and the Association of Southeast Asian Nations (ASEAN) — that support efforts to facilitate trade and investment, as well as in our involvement in various multilateral free trade agreements, such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, signed earlier this year, and the ASEAN regional comprehensive economic partnership, which is currently under negotiation. That ensures us greater market access and strengthens trade links with our partners, which is fundamental as we prepare ourselves to take advantage of potential opportunities and adapt to the rapid changes that the fourth industrial revolution brings about.

In conclusion, Brunei Darussalam will continue to place emphasis on the need to adopt and adapt to the changes of technology and the fourth industrial revolution, in particular its linkage to sustainable development. That is a part and parcel of our pledge to achieve the Sustainable Development Goals and bring our people and planet closer together.

Mrs. Furman (Israel): I would like to thank Assistant Secretary-General Hochschild and the co-Chair of the Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals, for their interesting and timely briefings.

I would also like to thank Mexico for last year initiating the agenda item "Impact of rapid technological change on the achievement of the Sustainable Development Goals", which provides a platform for discussing and promoting this topic. Israel is pleased to be part of the Group of Friends on Rapid Technological Change, which was created by Mexico. We actively participated and supported the Mexican resolution (resolution 72/242) under this item during the seventy-second session, and we will engage again on the updated draft resolution during this session.

Israel is on the cutting edge of global technological innovation. Every day, Israelis and Israeli companies are redefining what is possible. What was barely imagined yesterday is in our hands today. It is a challenge, but also an opportunity. The pace of change is now so rapid that we have come to rely on specialists to help inform policy decisions. In that regard, we welcome the establishment, earlier this year, of the Secretary-General's High-level Panel on Digital Cooperation. Israel is proud that Kira Radinsky, an Israeli, was appointed to the High-level Panel and is one of its youngest members. Ms. Radinsky has a remarkable record of achievements. Among her accomplishments, Ms. Radinsky developed an algorithm that can recognize early-warning signs for predicting global events, such as political riots and epidemics. Israel fully supports the work of the Secretary-General's Panel and looks forward to its final report.

I would like to congratulate Japan and Mexico on their leadership of the Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals. Science, technology and innovation require partnership and collaboration, which multi-stakeholder networks can provide. Education is vital to facing the fast-changing world. Preparing youth for rapid technological change is key. We need to empower young people and provide them with the tools and skills to be agents of change. One Israeli start-up, for example, teaches very young girls and boys the basics of programming through play, using physical bricks to build robots. Creativity and entrepreneurial spirit are needed to ensure that all girls and boys have the skills to benefit from, and eventually lead, technological change.

Women are an integral part of that change and must not be left behind. Technology can provide women and marginalized groups with new opportunities that they previously lacked. That includes access to

many services, such as finance, health, education and security. Technology affects every aspect of our lives today, but we must remember that technology is a tool at the service of people. It is up to us to make sure that we use technology to make a positive difference in order to help transform the world into a better place and achieve the 2030 Agenda for Sustainable Development.

Mr. Margaryan (Armenia): Armenia welcomes the convening of today's meeting and the briefings delivered during the informal plenary meeting earlier today. This meeting provides a good opportunity to reflect on the transformative role of new technologies, which have served as a fundamental driver of change by enhancing possibilities for more inclusive and participatory societies. It is also the area that vividly demonstrates the most visible progress that we have all achieved throughout the transitioning process from the Millennium Development Goals to the Sustainable Development Goals. We welcome the prioritization of new technologies by the Secretary-General and the establishment of the High-level Panel on Digital Cooperation. We also welcome the Secretary-General's *Strategy On New Technologies* to enhance coordination and effectiveness across the work of United Nations agencies.

In Armenia, we are committed to embracing new technologies to create knowledge-based platforms for accelerating the implementation of the Sustainable Development Goals. In doing that, we rely on our human capital by placing high priority on providing youth across the country with digital training and access to information and communication technologies as a means for empowerment and capacity-building. The Tumo Centre for Creative Technologies, established in Armenia, is an example of a creative educational programme where thousands of teenagers have an opportunity to learn about new technologies through hands-on learning about the latest digital possibilities. The Tumo Centre is today expanding beyond the region, with new centres opening in Paris, Beirut, Moscow and Tirana, to allow young students to operate the latest digital tools and learn of and explore opportunities in a creative environment.

Armenia is a country with a very high rate of Internet penetration and is home to a vibrant and growing information technology industry that is using the potential of the tech community and diaspora links. New technologies, including digital technologies, are also being increasingly used to improve the efficiency of public services and the day-to-day operations of the Government. To that end, the Government of Armenia has embarked upon a digital agenda that aims to transform Armenia's economy into one that is high-tech and innovation-oriented.

Armenia hosted the Summit of the International Organization of la Francophonie last week in its capital, Yerevan. One of the central themes of the Summit was "Digital francophonie", which focused on supporting the involvement of youth and women and access to digital technologies.

The United Nations remains, through its various platforms, an important partner in helping to promote space for new ideas and creativity beyond the traditional mainstream development cooperation. Together with the United Nations country team, we have been setting up national platforms with a focus on the strong impact of reform and innovation in advancing smart development. Armenia's National Sustainable Development Goals Innovation Lab is a joint initiative of the Government of Armenia and the United Nations Development Programme to help accelerate the implementation of the Sustainable Development Goals. One of the Lab's priorities is to look at ways to apply modern technology, including artificial intelligence and big data, in addressing public policy issues.

Our track record gives us the confidence to continue on the path of innovation, while exploring further spaces for experimentation with the use of new technologies for public benefit. We are keen to encourage further discussions on the role of new technologies and innovation in support of socially and environmentally impactful projects, which is particularly relevant in the case of lower-middle-income countries. We are fully committed to promoting technologies and innovation in our national and global policies, having embraced them as a priority agenda.

Mr. Castañeda Solares (Guatemala) (*spoke in Spanish*): We would first like to acknowledge the statements made by the Minister for Foreign Affairs of the Republic of Estonia, Mr. Sven Mikser, and the Minister for Foreign Affairs of Mexico, Mr. Luis Videgaray Caso.

Before addressing the topic that has brought us here this afternoon, we express our appreciation for the call made by Mr. Videgaray Caso regarding the attention that should be given to the migration phenomenon, the prioritizing of human rights and the protection

of migrants, which are fundamental with respect to comprehensively addressing the causes of immigration.

I would now like to state Guatemala's position on the impact of rapid technological change on achieving the Sustainable Development Goals. First of all, we thank the delegations that have contributed to introducing and promoting this topic on the United Nations agenda, and we particularly commend the efforts of Japan and Mexico, which have aptly placed this issue at the forefront of the emerging issues in the debates of our Organization. We believe that rapid technological change, including exponential change, is increasingly relevant to all countries, particularly on the path to complying with the 2030 Agenda for Sustainable Development, given that it will affect myriad factors that influence progress in complying with each of the Sustainable Development Goals.

Much of the problem in developing policies that are consistent with the challenges presented by rapid technological change is linked to the lack of information, coupled with the opacity with which we anticipate the positive and negative effects of the application of new technologies in our societies, economies, the environment and even our politics. That is why we greatly appreciate the work of the Technology Facilitation Mechanism and its inter-agency task team on science, technology and innovation, which — in addition to contributing to the broad dialogue on the matter and thereby helping us to better understand the benefits, vulnerabilities and problems — provides us with useful elements in facing the challenges arising from this issue. Reliable information allows us to identify the causes of undesired effects or to correct those policies that, due to a lack of good planning and analysis, have had negative externalities.

An example of that is the orthodox, but mistaken, rhetoric of national economic policies that seeks to demonize free trade by declaring that the loss of jobs is caused by migrants, when that is not the case. According to the Director-General of the World Trade Organization, Mr. Roberto Azevêdo, 80 per cent of jobs loss is due to the use of new technologies. That example suggests that by having clarity and certainty about the causes and effects of our public policies, we can better define them and minimize the negative effects.

In that connection, we must urgently promote knowledge of technologies and their impact on our daily lives. We therefore support this initiative and the Technology Facilitation Mechanism and we will support the draft resolution on this highly important issue to be submitted for consideration by the Assembly at the current session.

Mr. Hattrem (Norway): First, let me express my gratitude to Mexico for bringing this very important topic to the forefront, both through a highly topical resolution (resolution 72/242) on the subject and by giving us an opportunity to share our reflections on the matter here today.

Digital technology has enormous potential to advance sustainable development. New technologies can increase the welfare of people throughout the world, but such rapid shifts also give rise to new challenges. It is therefore important that we closely examine the role digital technology can play in sustainable development, while increasing our awareness of the new set of challenges it creates. To illustrate that with an example, we need to continue to make steps to bridge the digital divides — including the gender digital divide — that might arise. If not, we risk contributing to uneven growth and rising inequality.

Today's mechanisms for international development cooperation were not set up in a way that allows us to adequately deal with the rapid shift in technology. Just recently, the World Bank announced that we will not reach our Sustainable Development Goals (SDGs) if we do not use digitalization and new technology effectively. We therefore need to close the knowledge gaps and promote interdisciplinary and system-wide collaboration in this field so that our development system not only keeps up with and responds to the challenges that accompany new technologies, but also harnesses and unveils the significant opportunities that arise.

The Secretary-General's establishment of the High-level Panel on Digital Cooperation and the *Strategy On New Technologies* shows that the United Nations is putting this topic at the top of its agenda. We welcome those important initiatives and look forward to following their progress along the way, as well as to the Panel's recommendations in nine months' time. We are pleased that our Minister of International Development, His Excellency Mr. Nikolai Astrup, is among the members of the Secretary-General's Panel, whose recommendations will draw from the wide experience and expertise from the public and private sectors, civil society, academia and the technical community. The Minister's Panel

membership follows the recent launch of a Norwegian strategy of digitalization and technology in Norway's international development cooperation. Our national experience has taught us that many companies and organizations with rich technological competence stand ready to contribute, but that our efforts and development strategies would stand to gain from a more systematic and goal-oriented approach.

I would argue that the same is valid here at the United Nations. For example, at the Technology Facilitation Mechanism and the Science, Technology and Innovation Forum, we have been presented with a steadily increasing number of exciting examples of new technologies and how they can be constructive towards our attainment of individual SDGs — as well as several Goals at the same time. The goal today and for our future is to create better lives and opportunities for more people on the planet and to leave no one behind. In order to reach that goal, we need to tap into the immense bank of knowledge that exists and convert challenges into opportunities.

Let me conclude by saying that Member States can count on Norway's support and commitment on this important subject. We look forward to continuing this important debate at the United Nations.

Mr. Jean (Canada): I would like to start by thanking Mexico for taking such an active leadership role in bringing the challenges and opportunities of rapid technological change to the table, including by initiating resolution 72/242, on the impact of rapid technological change on the achievement of the Sustainable Development Goals (SDGs). We hope this year's draft resolution will once again enjoy many co-sponsors, as it did last year, with Canada being among them.

Canada is proud to be an early and active member of the core group that Mexico has spearheaded on exponential technological change. In Canada's address to the General Assembly during high-level week (see A/73/PV.16), we spoke of the imperative to explore new ways of doing things. Sticking to old approaches will not help us meet the targets of the 2030 Agenda for Sustainable Development. There is great potential in the domain of disruptive technologies for developing new, forward-looking approaches to advance the 2030 Agenda.

The benefits of disruptive technologies for development can be profound, but emerging technologies do not exist in a vacuum. They can, at a rapid pace, further exacerbate and replicate the existing inequalities, biases and prejudices that are systemic in the contexts in which they are developed and deployed. As we harness the potential of emerging technologies, it is critical to ensure that the ways in which we do so support economic and societal inclusion.

One of Canada's top priorities, as we consider ways to reap the benefits of disruptive technologies, is gender equality. That includes addressing a variety of issues — such as equal access for women to capital, markets, digital technology and business development services — as well as women's empowerment and full participation in leadership and decision-making processes. Reducing the barriers that women face and promoting the empowerment of women and girls will lead to benefits for their communities and have a variety of positive spin-offs that will contribute to achieving the SDGs.

Despite the rapid proliferation of disruptive technologies globally, serious digital divides remain between and within countries, including across gender, geography, age and income dimensions. They reflect inequalities in access to the social, economic and cultural benefits of increased connectivity.

Even in countries like Canada, connectivity is a challenge. Many of our remote, northern communities have little, poor or no connectivity. We are working to help address the issue. Over the past two years, Canada's Government has built partnerships with the private sector to improve connectivity. We have also seen communities take matters into their own hands and begin setting up community networks to bring the digital world to their schools, hospitals, small businesses and local Governments. They have done so creatively and within the existing regulatory framework for service providers. In that regard, South Africa is an innovator and role model in allowing community set-ups like the Zenzeleni Networks, which provide affordable access to small communities.

As we continue to hold discussions that contribute to shaping future approaches, I cannot overstate the importance that Canada places on ensuring the inclusion of all stakeholders. As today's discussion highlights, together we can draw on a diversity of thought, experience, skills, knowledge and ideas to ensure emerging technologies are developed and deployed in ways that can support the future we want to

see, a future that supports better outcomes for all and in which no one is left behind.

The Acting President: I now call on the observer of the Organization for Economic Cooperation and Development.

Mr. Ogilvy (Organization for Economic Cooperation and Development): Rapid innovation, including digitalization, offers enormous potential to boost productivity, incomes and well-being in all of our countries. It is our hope that they will accelerate efforts to achieve the Sustainable Development Goals (SDGs) and to leave no one behind.

We are encouraged by the potential for new technologies to help bridge divides and to reduce inequalities. The potential for developing countries to harness the benefits of leapfrogging is particularly encouraging. The potential for digital technologies to help overcome geographical barriers to accessing markets — for land-locked countries or for small island economies, for example — is also clear.

We need to ensure that our investments in technology and in public goods, such as education and digital skills, help to tackle inequalities rather than accentuate them. Two hundred and fifty million fewer women than men today have access to Internet technologies and, despite progress, women and girls remain underrepresented in science, technology, engineering and mathematics subjects and career areas. Discriminatory social norms and institutions continue to be significant barriers in all of our economies.

We know that innovation will disrupt labour markets, as it has done in the past — affecting the distribution of jobs, wages and income. When it comes to our economies, the diffusion of digital technologies remains incomplete and uneven across firms, likely contributing to the widening productivity gap between global frontier firms and the rest.

The challenge ahead is not to put the brakes on; rather, it is a matter of working together to put the right policy responses in place to ensure that the benefits of innovation are broadly shared. That includes strengthening international cooperation to address shared challenges — the taxation of increasingly digital economies, for example, or enhancing collaboration on digital security issues, which very often transcend national borders. The role of national science, technology and innovation road maps and policies will be crucial in all of those efforts.

My organization, the Organization for Economic Cooperation and Development (OECD), will publish next month its 2018 edition of the *Science, Technology and Innovation Outlook*. For the first time, it will contain a special chapter on such policies for the SDGs. Its recommendations will be wide-ranging. It will show, for example, that national science, technology and innovation policies are too narrowly focused on national priorities, with insufficient focus and funding to target the global public goods that we all know will be crucial to the achievement of the 2030 Agenda for Sustainable Development. Our forthcoming report will also highlight how traditional science policy needs to be revisited. In areas such as artificial intelligence, gene editing and neurosciences, for example, the science and technology are moving faster than our legal and ethical rules. We need new science governance models that are aligned with that reality.

The OECD is already working hand in hand with others in many of those areas, including the United Nations family, to help put evidence on the table, drill down into the challenges and help design solutions. Our Going Digital initiative aims to dismantle the silos that still prevail in public policymaking today and to advance more coherent and comprehensive approaches.

As Erik Brynjolfsson and Andrew McAffee of the Massachusetts Institute of Technology wrote,

> "Computers and other digital advances are doing for mental power ... what the steam engine and its descendants did for muscle power."

Our collective responsibility is to ensure that those changes deliver a more harmonious, more resilient, more inclusive and ultimately more sustainable global economy. I hope that the OECD can make a meaningful contribution in that shared endeavour.

The Acting President: We have heard the last speaker in the debate on this item.

The Assembly has thus concluded this stage of its consideration of agenda item 133.

Before concluding, I would like to thank the interpreters for remaining with us past 6 p.m.

The meeting rose at 6.20 p.m.